

**CURRICULUM VITAE**  
**MÓNICA MEDINA**

DOE Joint Genome Institute  
Walnut Creek, CA 94598  
tel: (925) 296-5633  
e-mail: M\_Medina@lbl.gov

current position:  
Research Scientist  
Comparative Genomics Group

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**EDUCATION**

**Ph.D.** 1998. Marine Biology and Fisheries (MBF). Rosenstiel School of Marine and Atmospheric Science. University of Miami. *Molecular Systematics and Population Genetics of Sea Hares (Gastropoda: Opisthobranchia: Anaspidea)*.

**B.S.** 1989. Biology, focus on Zoology. Universidad de Los Andes. Bogotá, Colombia.

**Languages.** Spanish. Native speaker.

English. High written and spoken proficiency.

Portuguese. Basic reading and speaking knowledge.

**PROFESSIONAL EXPERIENCE**

**Research Scientist.** (Present). DOE Joint Genome Institute. Walnut Creek, CA.

Comparative Genomics. Mitochondrial genome evolution. P.I. Jeffrey Boore.

**Postdoctoral research fellow.** (2000). California Academy of Sciences (CAS). San Francisco, CA. Nudibranch systematics. P.I. Terrence Gosliner.

**Postdoctoral teaching fellow.** (2001) Molecular Systematics Workshop. CAS.

**Postdoctoral research fellow.** (1998-2000). Marine Biological Laboratory (MBL). Woods Hole, MA. Phylogenetics of unicellular eukaryotes and early animals. P.I. Mitchell Sogin.

**Postdoctoral teaching assistant.** (2000) Molecular Evolution Workshop. MBL.

**Postdoctoral teaching assistant.** (1998) Nyanza project. Lake Tanganyika. Tanzania.  
Research in Tropical Lakes. Joint NSF-REU/ UN-GEF.

**Research Intern.** (1991) Smithsonian Tropical Research Institute (STRI). Panamá.  
Phylogenetics of tropical fish and sea urchins. P.I. Eldredge Bermingham.

**Research Assistant.** (1990) STRI. Population genetics of tropical birds. P.I. Eldredge Bermingham.

**Research Assistant.** (1990) STRI. Speciation of Atlantic and Pacific reef fish. P.I. Harilaos Lessios.

**Research assistant.** (1989) Fundación Natura. Colombia. Survey of the vertebrate fauna in an Andean páramo region, as part of the development of a nature reserve.

**Undergraduate research assistant.** (1988) University of Iowa. Regeneration of damaged optical nerve cells during toad development. P.I. Jerry Kollros.

**Undergraduate research assistant.** (1987) Universidad de Los Andes. Colombia.  
Population genetics of Colombian Amerindian groups. P.I. Alvaro Espinel.

### COURSES AND TRAINING

- 2001. Embryology: Concepts and Techniques in Modern Developmental Biology. MBL.
- 1996. Program in Statistical Genetics. North Carolina State University. Raleigh, NC.
- 1995. Molecular Markers Workshop. University of Florida. Gainsville, FL.
- 1993. Workshop on Molecular Evolution. MBL.
- 1991. Organization for Tropical Studies (OTS) fellowship. Costa Rica.  
Smithsonian research internship. STRI. Naos Marine laboratory. Panamá.
- 1990. Exxon fellowship. STRI. Naos Marine laboratory. Panamá.

### ABSTRACTS

- 2001. Mitochondrial evolution of crown gastropods: insight from large subunit sequences and gene order data. World Congress of Malacology (WCM). Vienna. Austria.
- 2001. Nembrothid Nudibranchs from the Eastern Pacific: A Preliminary taxonomic revision of the genera *Tambja*, *Roboastra* and *Nembrotha*. Western Society of Malacology. San Diego, California. USA.
- 2000. Testing the “excavate hypothesis” based on large subunit ribosomal RNA sequences. Society for Molecular Biology and Evolution. New Haven, Connecticut. USA.
- 2000. Relationships among deep animal lineages based on large ribosomal subunit (28S) sequence data. First International Astrobiology Conference. NASA-Ames, California. USA.
- 1999. Can more molecular data resolve relationships among animal lineages? Gordon Research Conference on Molecular Evolution. Hayama, Japan.
- 1997. An overview of the national resource for *Aplysia*. Cell and Molecular Biology of *Aplysia* and Related Invertebrates. Cold Spring Harbor Laboratory Meetings. New York, New York. USA.
- 1996. The *Montastraea annularis* species complex from a new molecular approach. 8th International Coral Reef Symposium. Panama City, Republic of Panama.
- 1996. Molecular systematics of sea hares (Opistobranchia:Anaspidea) based on mitochondrial DNA evidence. American Malacological Union Meeting. Chicago, Illinois. USA.
- 1995. Phylogenetic relationships of sea hares (Opistobranchia:Anaspidea) based on analysis of 16S mtDNA sequence. World Malacological Congress. Vigo, Spain.
- 1995. Molecular population genetics of the California Sea Hare, using scnDNA markers. Keystone Symposium on Molecular Approaches to Marine Ecology and Evolution. Santa Fe, New Mexico, USA.
- 1994. Genetic population structure of the California Sea Hare (*Aplysia californica*). Annual Congress Society for the Study of Evolution. Athens, Georgia, USA.
- 1994. Single copy nuclear gene markers and the population genetics of the California Sea Hare (*Aplysia californica*). III Congress of Marine Science MarCuba. Habana, Cuba.

## PUBLICATIONS

- Medina, M.**, T.M. Collins, and P.J. Walsh. (In press). MtDNA Ribosomal Gene Phylogeny of Sea Hares in the Genus *Aplysia* (Gastropoda, Opisthobranchia, Anaspidea): Implications for Comparative Neurobiology. *Syst. Biol.*
- Medina, M.**, A. Collins, J.D. Silberman, and M.L. Sogin. (2001). Evaluating Hypotheses of Basal Animal Phylogeny Using Complete Sequences of Large and Small Subunit rRNA. *Proc. Natl. Acad. Sci.* 98(17):9707-9712.
- Medina, M.**, and P.J. Walsh. (2000). Population genetics of the California sea hare (*Aplysia californica*) based on scnDNA and microsatellite data. *Mar. Biotech.* 2:449-455.
- Walsh, P.J., Heitz, M.J., Campbell, C.E., Cooper, G.J., **Medina, M.**, Wang, Y.S., Goss, G.G., Vincek, C., Wood, C., and C. P. Smith. (2000). Molecular Characterization of a Urea Transporter in the Gill of the Gulf Toadfish (*Opsanus beta*). *J. Exp. Biol.* 203:2357-2364.
- Medina, M.**, and P.J. Walsh. (2000). Systematics of the Order Anaspidea Based on Mitochondrial DNA Sequence (12S, 16S and COI). *Mol. Phyl. Evol.* 15:41-58.
- Medina, M.**, E. Weil, and A.M., Szmant. (1999). An Examination of *Montastraea annularis* species complex (Cnidaria: Scleractinia) using ITS and COI sequences. *Mar. Biotech.* 1: 89-97.
- Brawn, J.D., T.M. Collins, **M. Medina** and E. Bermingham. (1996). Associations between physical and geographical variation within three species of Neotropical birds. *Mol. Ecol.* (5) 33-46.

## PUBLICATIONS IN PREPARATION

Collins, A. and **Medina, M.**. Overview of Molluscan Phylogenetic Relationships. In *Molecular Systematics and Phylogeography of Mollusks*. Smithsonian Institution Press.

**Medina, M.**, L. Amaral-Zettler, and M.L. Sogin. Unicellular sister groups to Fungi and Animals according to phylogenetic reconstructions based on nuclear 18S and 28S rDNA data.

## AWARDS

2001. MBL scholarship to attend the embryology course. USA.
2001. In-house research grant. CAS. San Francisco. USA.
1999. Postdoctoral travel award. Gordon Research Conference on Molecular Evolution. Japan.
- 1997 (from 1992). Research assistantship. University of Miami. Various MBF student awards. Miami. USA.
1996. Student travel award. American Malacological Union Meeting. Chicago. USA.
1995. Student travel award. World Malacological Meeting. Spain.
1994. Iberoamerican short-term research fellowship. University of Oviedo. Spain.

- 1993. Sigma-Xi Grant-in-Aid of research. USA.
- 1992. Sanibel -Captiva Shellclub research fellowship. USA.
- 1988. International Student Exchange Program (ISEP). University of Iowa. USA.  
MacBride Scholarship. Iowa Lakeside Laboratory. USA.

### **FIELD EXPERIENCE**

- 2001. Opisthobranch survey of the Pacific coast of Panamá on board of the Smithsonian R/V Urraca.  
Opisthobranch survey of Parque Nacional Guanacaste. INBio. Costa Rica.
- 1998. Sampling for molluscan speciation studies. Lake Tanganyika. Tanzania.
- 1992-1998. Coral spawning. Assistant diver in other reef studies. Florida Keys.
- 1992. Collections of benthic opisthobranch molluscs. California and Baja California.
- 1991. Tropical biology training in multiple field stations in Costa Rica.
- 1988. Limnology and food web ecology, Lake Okoboji. Iowa.

### **Ship time**

- 2001. Gulf of Chiriquí and Gulf of Panamá. Two weeks. R/V Urraca. (Smithsonian). P.I. Juan Maté.
- 1997. Dry Tortugas and Florida Keys. One week. R/V Bellows (Florida Institute of Oceanography). Dredging of mid-depth benthic communities. P.I. Tim Collins.
- 1996. Pacific coast of Panamá, Pearl Islands, Uva Island. Coral reef biology. Three weeks. R/V Urraca. (Smithsonian). P.I. Peter Glynn.
- 1995. Florida Keys. One week. R/V Calanus (Univ. of Miami). Coral physiology. P.I. Alina Szmant.